

CLAIM AMENDMENTS

Listing of Claims:

- Sub
D17
1. (Currently Amended) A power train, comprising:
- a prime mover having an output member rotatable about a predetermined
- axis;
- a driven unit having a rotary input member; and
- means for transmitting torque between said input and output members,
- including
- an engageable and disengageable friction clutch having a housing
- rotatable with said output member about said axis,
- a rotary clutch disc arranged to rotate with said input member,
- means for selectively coupling said clutch disc to said housing, including
- at least one cylinder and piston unit having at least one cylinder mounted on said
- housing so that it is axially fixed while being rotatable with reference to said housing;
- and
- means for reversibly and separably coupling said at least one cylinder
- with said housing within confines of a clutch space so that only the friction clutch has to
- be maneuvered off of the rotary input member for separating the prime mover from the
- driven unit without requiring extensive disassembly of the driven unit.
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2. (Original) The power train of claim 1, wherein said at least one cylinder is rotatable about said predetermined axis.

3. (Original) The power train of claim 1, wherein said at least one unit further comprises an annular piston reciprocable in said at least one cylinder.

4 (Withdrawn) The power train of claim 1, wherein said means for selectively coupling comprises a plurality of cylinder and piston units each having a cylinder mounted on said housing in a fixed position, as seen in the direction of said axis, and rotatable with reference to said housing, said cylinders being spaced apart from each other in a circumferential direction of said housing.

5. (Withdrawn) The power train of claim 4, further comprising a support rotatably mounted on said housing and arranged to carry said cylinders of said plurality of cylinder and piston units.

6. (Withdrawn) The power train of claim 4, wherein said clutch further comprises a pressure plate reciprocable in said housing relative to said housing and a clutch spring arranged to bias said pressure plate against said clutch disc in the engaged condition of said clutch, each of said units further having a piston reciprocable in the respective cylinder in the direction of said axis relative to said clutch spring, and said clutch further having a disengaging bearing interposed between said pistons and said clutch spring.

7. (Original) The power train of claim 1, wherein said at least one cylinder is coaxial with said housing and is rotatable relative to said housing about said axis, said torque transmitting means further including an antifriction bearing interposed between said housing and said at least one cylinder.

8. (Original) The power train of claim 1, further comprising a first bearing interposed between said housing and said at least one cylinder, said at least one unit further comprising a piston reciprocable in said at least one cylinder and a second bearing interposed between said piston and a resilient element of said clutch, said resilient element being arranged to bias a pressure plate of said clutch against said clutch disc in the engaged condition of said clutch.

9. (Original) The power train of claim 8, wherein said bearings spacedly surround said axis, said first bearing being disposed at a first radial distance from said axis and said second bearing being disposed at a second radial distance from said axis.

10. (Original) The power train of claim 9, wherein said first distance at least approximates said second distance.

11. (Withdrawn) The power train of claim 9, wherein one of said bearings surrounds the other of said bearings.

12. (Withdrawn) The power train on claim 9, wherein said bearings are disposed at at least substantially identical distances from said output member as seen in the direction of said axis.

13. (Canceled)

14. (Original) The power train of claim 1, wherein at least a portion of said housing consists of sheet metal.

15. (Original) The power train of claim 14, wherein said portion of said housing is a converted blank.

16. (Original) The power train of claim 1, wherein said housing includes an annular portion nearest to and surrounding said axis, said means for selectively coupling further including a bearing centered by said annular portion.

17. (Previously Amended) The power train of claim 16, wherein an intermediate ring surrounds said bearing and includes a feature for holding the bearing in an axially fixed position relative to the housing.

18. (Original) The power train of claim 1, wherein said housing of said clutch includes a flywheel and a cover having a radially outer portion remote from said axis and affixed to said flywheel and a radially inner portion adjacent to but spaced apart

from and surrounding said axis, said clutch further having at least one component disposed in said housing between said flywheel and said cover as seen in the direction of said axis.

19. (Canceled)

20. (Original) The power train of claim 1, further comprising an antifriction bearing between said at least one cylinder and said housing, and means for separably coupling said bearing with said housing of said friction clutch.

21. (Original) The power train of claim 20, wherein said bearing has an outer race and said coupling means is arranged to separably connect said housing with said outer race.

22. (Original) The power train of claim 20, wherein said coupling means is selected from the group consisting of a bayonet lock, a snap fastener and a detent.

23. (Original) The power train of claim 1, wherein at least a portion of said at least one cylinder consists of a plastic material.

24. (Original) The power train of claim 1, wherein said at least one cylinder is of one piece.

25. (Original) The power train of claim 1, wherein said at least one cylinder is an injection molded part.

26. (Original) The power train of claim 1, further comprising at least one fixed component, said at least one cylinder being arranged to bear upon said at least one fixed component while receiving torque from one of said input and output members.

27. (Original) The power train of claim 26, further comprising a variable-speed transmission having an input shaft including said rotary input member, said transmission further comprising a stationary case and said fixed component forming part of said case.

28. (Withdrawn) The power train of claim 26, wherein said at least one cylinder and piston unit is a fluid-operated unit and further comprising means for supplying fluid to said at least one cylinder and piston unit including a conduit for pressurized fluid, said at least one fixed component forming part of said conduit.

29. (Withdrawn) The power train of claim 26, further comprising a variable-speed transmission having an input shaft including said rotary input member and a stationary case, said at least one fixed component including at least one projection extending in at least substantial parallelism with said axis, connected with one of said case and said at least one cylinder and arranged to abut a stop of the other of said case and said at least one cylinder.

30. (Withdrawn) The power train of claim 1, wherein said at least one cylinder and piston unit further includes a piston reciprocable in said at least one cylinder in the direction of said axis to thereby change the condition of said clutch, said at least one cylinder having a stop arranged to limit the extent of movability of said piston in the direction of said axis.

31. (Withdrawn) The power train of claim 1, further comprising a first bearing interposed between said at least one cylinder and a clutch release bearing between a piston of said at least one unit and an energy storing element of said clutch, said first bearing being disposed between said clutch disc and said release bearing as seen in the direction of said axis.

32. (Original) The power train of claim 1, wherein said clutch is subject to wear in response to repeated engagement and disengagement thereof, and further comprising means for automatically compensating for said wear.

33. (Original) The power train of claim 1, wherein said clutch is a push type clutch.

34. (Original) The power train of claim 1, wherein said at least one cylinder and piston unit is a fluid-operated unit and further comprising means for automatically supplying fluid to said at least one unit.

35. (Original) The power train of claim 34, wherein said means for automatically supplying fluid to said at least one unit includes a master cylinder.

36. (Withdrawn) The power train of claim 1, further comprising means for transmitting torque between said output member and said housing including a wall flexible in the direction of said axis.

37. (Original) The power train of claim 1, further comprising means for coupling said input member with said clutch disc and means for separably connecting said housing to said output member so that said clutch disc can remain coupled to said input member prior, during and upon separation of said housing from said output member.

38. (Original) The power train of claim 37, wherein said input member forms part of a change-speed transmission.

39. (Original) The power train of claim 1, further comprising a pilot bearing between a prime mover including said output member and said clutch.

40. (Original) The power train of claim 1, further comprising a pilot bearing between a prime mover including said output member and a driven assembly including said input member.

41. (Original) The power train of claim 1, further comprising a pilot bearing rotatably journalling one of said input and output members in the other of said input and output members.

42. (Currently Amended) A power train, comprising:

a prime mover having an output member rotatable about a predetermined axis;

a driven unit including a rotary input member coaxial with said output member; and

an engageable and disengageable friction clutch arranged to transmit torque between said input and output members and including

a housing rotatable with said output member about said axis,

a clutch disc disposed in said housing and affixed to said input member,

a pressure plate movable in the direction of said axis and arranged to rotate with and disposed in said housing,

an energy storing device disposed in said housing and operable to bias said pressure plate against said clutch disc to thus engage the clutch and establish a torque transmitting connection between said input and output members, and

means for engaging said clutch including an actor rotatable with and axially fixed relative to said housing, said actor including means for moving said energy storing device relative to said housing; and

means for reversibly and separably coupling said actor with said housing within confines of a clutch space so that only the friction clutch has to be maneuvered

off of the rotary input member for separating the prime mover from the driven unit
without requiring extensive disassembly of the driven unit.

43. (Original) The power train of claim 42, wherein said clutch engaging means further includes a bearing interposed between said actor and said energy storing device.

44. (Original) The power train of claim 42, wherein said actor is an electrically operated actor.

45. (Original) The power train of claim 42, wherein said actor is a mechanically operated actor.

46. (Original) The power train of claim 45, wherein said actor is coaxial with said input and output members.

47. (Original) The power train of claim 42, wherein said clutch disc and said pressure plate are subject to wear in response to repeated engagement and disengagement of said clutch, and further comprising means for automatically compensating for said wear including means for moving said energy storing device relative to said housing.

48. (Original) The power train of claim 42, wherein said prime mover is the engine of a motor vehicle and said driven unit further includes a change-speed transmission.

49. (Original) The power train of claim 42, wherein said clutch disc includes friction linings engageable by said pressure plate and a torsional vibration damper between said friction linings and said input member.

50. (Original) The power train of claim 42, wherein said energy storing device includes a diaphragm spring and said clutch further comprises a counterpressure plate forming part of said housing, said clutch disc being disposed between said pressure plate and said counterpressure plate as seen in the direction of said axis.